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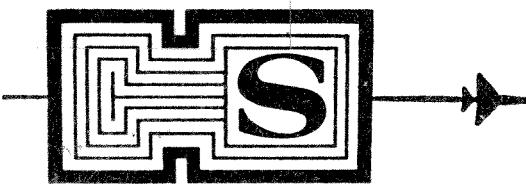


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CITY OF SEBASTOPOL

WATER RATE STUDY



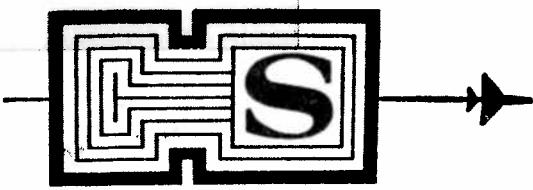
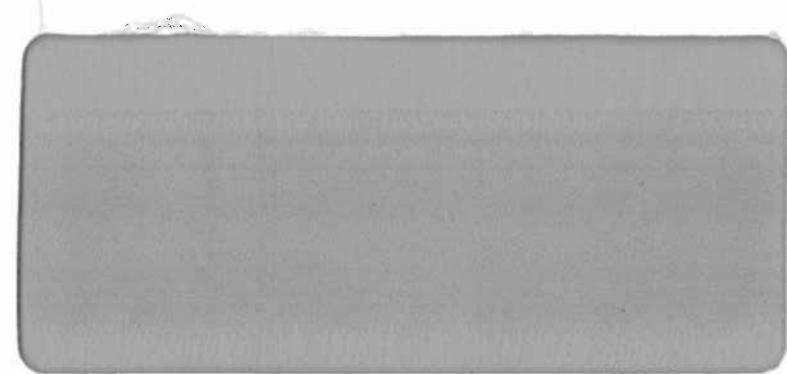
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CITY OF SEBASTOPOL

WATER RATE STUDY

February, 1980

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Paul L. Schoch  
City Engineer

Project: ENGR: P-83

## WATER RATE STUDY

The City of Sebastopol has not always been blessed with an excellent water system. In the late sixties it was in the position of having the entire City served by inadequate sized and leaking steel water lines. Pressures were low in the higher reaches of the City with a common occurrence being no water pressure for a large part of the residents. Three wells were in existence at that time and an archaic booster system. In 1966, the City authorized the firm of M. C. Yoder and Associates to prepare a water master plan with recommendations for upgrading an obvious inadequate system. At the time the plan was made the City was losing through leaking mains upwards of 40% of water pumped and City crews were repairing over 100 leaks within a single calendar year. The master plan findings indicated that massive improvements were needed to provide a water system which could meet the Insurances Services Office (ISO) requirements for fire protection, State Health Department Standards and a system which would be reliable.

In 1967, the City Council authorized a bond election for water system improvements, the payment of bonds to be through water revenues.

To insure adequate funds to support this project, the City increased water rates prior to the bond election. The bond issue was overwhelmingly approved and through the next three years the water system was improved by the addition of nine miles of new water lines, one additional well, and two separated pressure zones.

After all improvements were made, the City was inspected to determine fire insurance rates. The ISO, during that grading review, gave the City of Sebastopol a water utility rate of 2 (water rating of 1 is highest).

In 1978, another bond issue was presented to the voters to upgrade the water system

as called for in the Yoder Report, and again approved.

By continuing to upgrade and maintain a water system which has the capability of providing consistent service to citizens with adequate pressure and fire flow, the City has been able to maintain a low fire insurance rating. The City, as further evidence of the quality of the water system, did not have to initiate water conservation methods during the drought of 1976-1977. The City's water supply and distribution system is one of the finest, if not the finest in the County of Sonoma.

All of this does not come cheap. Cost of improving the system has fortunately been made during times of relatively low construction cost indexes. However, the continued operation of the system, including utilities, salaries, parts, and maintenance, rises with the inflationary spiral, thus always pressing for the need of more funds to support the system. A brief history of water rates is as follows:

1. 1957 - Schedule of rates were based on reduced unit costs as usage went up. This was a common procedure in that era, in which the cost of water was reduced as more was being used.
2. 1960 - Water rates were expanded by adding additional savings per unit as usage went up. At this time, all canneries (5) were on City water system.
3. 1965 - The minimum charge per meter was increased by 50¢ per month. Same rate structure was maintained.
4. 1967 - Water rates were increased prior to bond issue to provide revenue to pay off bonds.

5. 1976 - Water rates increased to current rates. (Staff had recommended 50¢ per 100 cubic feet - only 35¢ per 100 cubic feet was approved by the City Council).

Population and Usage

Figure 1 is a graph tabulated from 1971 through 1979, showing population, annual water production and maximum day. It is of interest to note that a City water rate increase coincided with the 1976-1977 drought. The graph shows that annual production dropped during this same period of time; reflecting conservation by users both from increased cost of water and from publicity concerning the drought. Per capita consumption prior to the water rate increase and drought was approximately 160 to 170 gallons per person per day. This per capita consumption is now in the range of 140 to 150 gallons per capita per day. In future calculations for water production and sales, I have continued with the 150 gallon per capita per day. For future population projection I have used 6% per year.

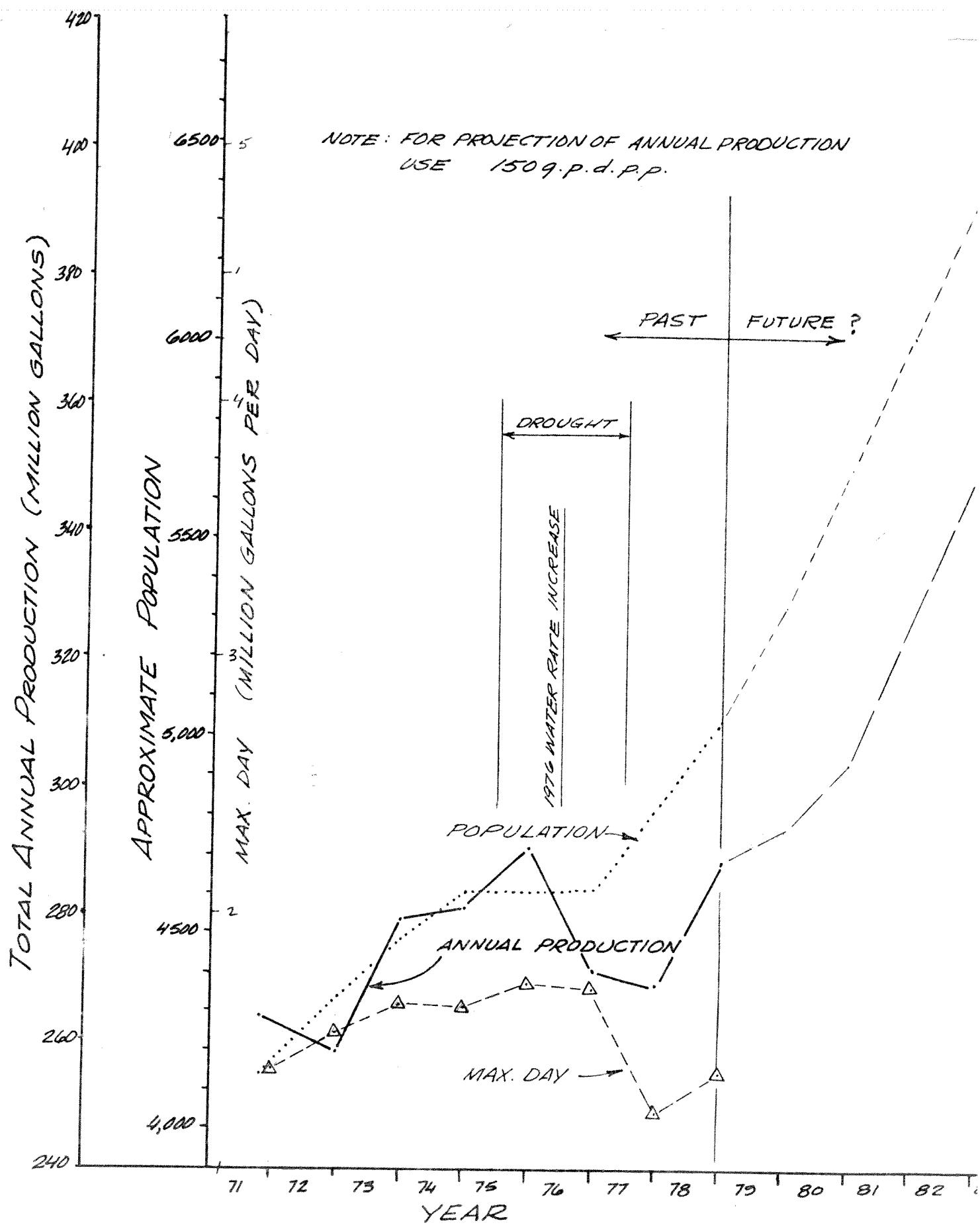
The phenomenon of conservation with corresponding increased water rates has been experienced by others. Attached is copy of an article originally from the New York Times News Service indicating similar conditions throughout the United States. During inflationary spirals such as we have experienced, it is always difficult for the water utility to provide sufficient revenues to meet demands.

Determining the financial condition of a water utility is relatively simple. On one side of the ledger you have income from water sales. On the other side of the ledger you have expenses which include salaries, utilities, supplies, insurance, bill collection, engineering, administration, bond expense, and depreciation. Establishing these figures is not difficult and can be obtained directly from the City budget. Table 1 shows a breakdown of revenues and expense for fiscal years 1975-1976 through 1978-1979. The tabulation of income as opposed to expenses clearly

DATE \_\_\_\_\_  
BY \_\_\_\_\_ DATE \_\_\_\_\_

CITY OF SEBASTOPOL  
SUBJECT: WATER SYSTEM  
FIGURE 1

SHEET NO. 1 OF 1  
JOB NO. \_\_\_\_\_



WASHINGTON — In communities scattered across the country, spurred on by utilities, conservation-minded citizens are saving water and their good deed is rewarded with higher rates and higher water bills.

Earlier this month, the Washington Suburban Sanitary Commission, after encouraging its customers to conserve water, announced a 7 percent midterm rate increase to offset falling water and sewer revenues because people were not using enough water. The utility attributed the downturn in usage to an unusually rainy summer that left customers relying on nature instead of their garden hoses to water lawns. But for the utilities' 1.2 million customers in Prince Georges and Montgomery Counties in Maryland, the message seemed to be: Save and be sorry.

"It's happening all across the country," said Lawrence Silverman of the Washington-based Clean Water Action Project, a nonprofit national citizens lobby interested in clean water at reasonable prices. "It happened in San Francisco and other places, particularly during the drought when conservation raise rates."

For the consumer, already whipsawed by the gasoline crunch, such scenarios seem another example of the public being duped.

Not so, according to some experts in the field who point out that water conservation has kept some communities from having rate increases and, in other instances, offset the amount of an increase when rates do rise.

In Elmhurst, Ill., customers, faced with the need for an expensive new water facility and drastically higher rates, managed to avoid both through an aggressive water conservation program. And, until the 1977 California drought, the East Bay Municipal Utility District on San Francisco's eastern shore operated a conservation program that kept rates from rising.

For the consumer who has conserved and still seen his or her utility bill rise, such long-term considerations are often missed and the experience ends up being a disincentive to restraint.

This can be avoided with changes in rate structures from flat fees to paying only for water consumed, said Silverman, who also blamed the design of water facilities for increased rates even in the face of conservation.

But rate changes do not always solve the problem, said Andrew S. Ellicott, director of technical services for the Association of Metropolitan Sewerage Agencies. "If you're in a community, a development or subdivision and it's fairly new, it's possible that more than one home may be hooked to the same meter. The same for a condominium; it's in the condo fee, so there is no real incentive for most people to get concerned about conservation."

Both industry and consumers find themselves in the same situation in the conservation-rate debate.

"We face the problem when we conserve water that the utility raises the user charge," said Jack Cooper of the National Food Processors Association here. "The utility has to cover its fixed costs, and they remain the same whether industry conserves or not. Less gallons means they sometimes have to up their rates. It's a Catch-22."

D-12 — THE SUN

Thurs., Nov. 22, 1979

# Saving water has reward — higher rates

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TABLE 1  
WATER REVENUE AND EXPENSES

	1975	1976	1977	1978	Est. 1979 1980
<b><u>Revenues</u></b>					
Water Sales & Services	\$103,647	\$129,943	\$179,649	\$193,348	\$201,000
<b><u>Expenses</u></b>					
<b>Direct</b>					
Salaries	20,152	27,768	32,430	37,601	34,820
Fringe Benefits	6,650	9,163	11,026	13,160	12,200
Utilities	19,722	25,520	34,530	30,255	34,375
Maintenance & Supplies	10,696	16,591	48,685	13,277	15,000
Insurance	7,500	20,200	45,777	45,062	45,000
Capitol Outlay	14,387	9,600	62,196	20,357	5,000
Customer Accounts Finance	10,567	9,992	8,700	9,550	12,430
Manager	7,247	3,111	2,636	2,882	3,036
Engineering	6,613	4,932	4,950	5,380	6,368
P. W. Admin. & Yard	21,656	16,372	27,882	8,373	29,416
Equipment Replacement	3,600	3,960	4,356	4,792	5,273
Bond Expense	28,750	28,510	27,775	34,430	88,333
Depreciation	<u>57,191</u>	<u>57,414</u>	<u>54,463</u>	<u>56,242</u>	<u>58,242</u>
TOTAL EXPENSES	\$214,731	\$233,133	\$365,406	\$281,361	\$349,493
Water Usage					
Billed 100/cu. ft.	318,145	324,785	298,810	333,998	350,000
BOND COST					
Projected	1980-81	1981-82	1982-83	1983-84	1984-85
	\$80,383	\$78,383	\$81,382	\$78,933	\$81,563

shows that the water system has been operating at a deficit. The question is: How can this be? Revenues must be balanced against expenses. If total expenses are not balanced by water revenues then the additional funds must be obtained from some other place. In the case of Sebastopol, funds have been obtained from water connection charges and prior to 1978, from property tax revenues through the general fund. The City has been subsidizing the water system.

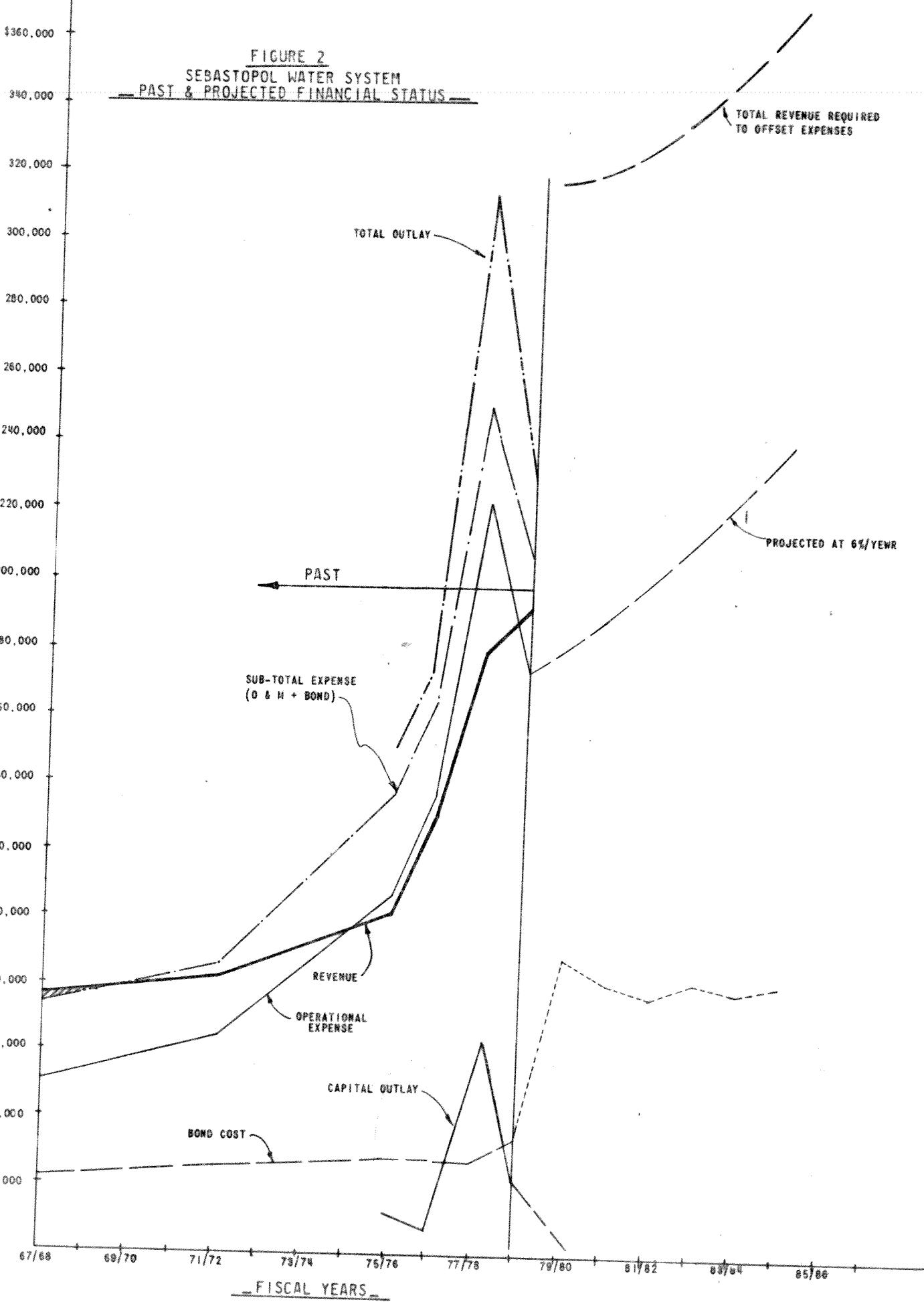
I have attempted to graphically represent the financial status of the Sebastopol Water System in Figure 2. The total revenue from the sale of water amounts to \$200,000.00 per year. The total expenses (excluding a reserve for depreciation or replacement) amounts to approximately \$270,000.00. If a minimum reserve for depreciation of \$50,000.00 per year were included in the budget, then the annual revenue necessary to generate and maintain a self-supporting system would be \$320,000.00. The system is therefore, operating at a \$120,000.00 per year deficit which has been made up by connection fees and other revenues, (if available). It is noted that during the fiscal year 1977-1978 the water utility expended approximately \$315,000.00 including capital outlay cost. The revenue for that year was \$180,000.00 for a deficit of \$135,000.00.

This high deficit has occurred concurrently with increased building activity, both residential and commercial, and therefore, a majority of this deficit was picked up by connection fees. To continue to rely on connection fees to provide sufficient revenue is a dangerous undertaking since future economic conditions are unknown and rate of growth could drop off at any time and thus reduce the necessary revenues needed to support the water system.

#### Establishing Water Rates

Developing an equitable water rate structure is never easy. The subject is so

FIGURE 2  
SEBASTOPOL WATER SYSTEM  
PAST & PROJECTED FINANCIAL STATUS



sensitive that many Cities will approach establishing rates with a single purpose - to generate just enough income to keep the system running while producing the least number of unhappy citizens. Unfortunately, this is an unreal situation and although may be allowed to continue for a few years, eventually will create financial problems in administering not only the entire City budget but especially the water system. It is even more difficult to increase water rates when the last increase for the City was in 1976, and during the 1976-1980 period we have been subjected to unprecedented inflation. Now we are in a position of having to face our customers with a substantial increase to maintain a valuable and necessary asset. In the past a City had many options in financing a water utility. Some Cities would establish rates which would generate revenues over and beyond the cost of operating the system with the overage going to support other parts of government. Other Cities would keep an unusually low water rate and subsidize the utility by means of property tax through contributions from the general fund (not now a viable alternative due to Proposition 13). The recommended procedure is, of course, to maintain a self-supporting system with rates being established to generate sufficient revenue to pay total cost of system.

To approach establishing a fair rate the total cost of a water system is allocated into four major expense categories:

Capital Cost (bond cost).

Customer Cost (clerical staff, accounting and collection, meter reading and maintenance).

Operation and Maintenance.

Depreciation Reserve (funds for replacement of lines, major repairs to pumps, painting reservoir, and emergency system repairs).

To provide revenues to cover these expenses, the water rate charge is broken down into two categories:

Ready to serve charge

Commodity charge

The capital cost or bond cost are fixed. If no water is used the bond cost must still be paid and the system must be ready to serve each meter connected. By equating all meters to 3/4" size (based upon equivalent flow of larger meters) there are an equivalent 2,201 meters. If we divide the bond cost of \$88,330.00 (1979-1980) by number of equivalent 3/4" meters, we obtain a bi-monthly cost of \$6.69.

Customer costs are relatively minor, but they do represent a measurable part of the total cost of running the system. In addition, they are consistent, it doesn't cost any more to read a large meter than a small one. For evaluating customer cost, I have used the following cost data:

Finance Office	\$12,430.00
City Manager's Office	3,036.00
Meter reading and repair	<u>8,400.00</u>
TOTAL	\$23,866.00

The annual cost distributed to all meters equates to \$2.77 per meter.

The total of these two is \$9.46 minimum per meter bi-monthly charge. In staff discussions it was felt that rather than jumping the minimum cost from \$5.00 to \$10.00 bi-monthly, that a median position be taken and an \$8.00 minimum bi-monthly charge would be used. Using this as our criteria, the following

bi-monthly charge per meter size would be:

<u>Meter</u>	<u>Current Bi-monthly Minimum Rate</u>	<u>Recommended Rates</u>
3/4"	\$5.00	\$8.00
1"	11.00	12.00
1-1/2"	21.00	21.00
2"	33.00	33.00
3"	61.00	61.00
4"	101.00	101.00

The total annual revenue produced from these minimum meter rates equals \$100,344.00.

The only other source of revenue for the water system is the commodity charge or use per 100 cubic feet. If we assume that our total sales will be 290 million gallons per year, then the following shows the method for computation of cost per 100 cubic feet.

290 million gallons per year equals	38,770,054 cubic feet
Less minimum use with basic meter charge	<u>-1,078,200</u> cubic feet
Remaining quantity of water to be sold	37,691,854 cubic feet
Need to generate	\$320,000.00
Less Customer Cost	<u>100,364.00</u>
To be generated by sale of water	\$219,636.00

$$\frac{\$219,636.00}{376,919} = 0.58\text{¢ per 100 cubic feet}$$

It is recommended that the rate for water be increased from 35¢ per 100 cubic

feet to 60¢ per 100 cubic feet for all water used over the minimum 100 cubic feet allowed for each meter connection.

#### Comparable Water Rates

It is difficult, if not impossible, to compare the water rates charged from one City to another. Each City has a unique situation of water distribution, storage, source and method of operation. Correspondingly, each City has a differing set of topographic conditions which may or may not require several separate zones. Regardless of all the differences, there is always the question as to where do we compare in water rates with other cities? Figure 3 shows City of Sebastopol present rate and proposed rate as per this study, and a comparison of other Cities within Sonoma County. The City of Rohnert Park is not shown since it has a flat meter rate. The comparison was made by using a typical family of four within the City of Sebastopol and using their annual water use and averaging that use to determine a bi-monthly cost. It is noted that this typical family of four was using 124 gallons per person per day, which was less than the average water use throughout the City.

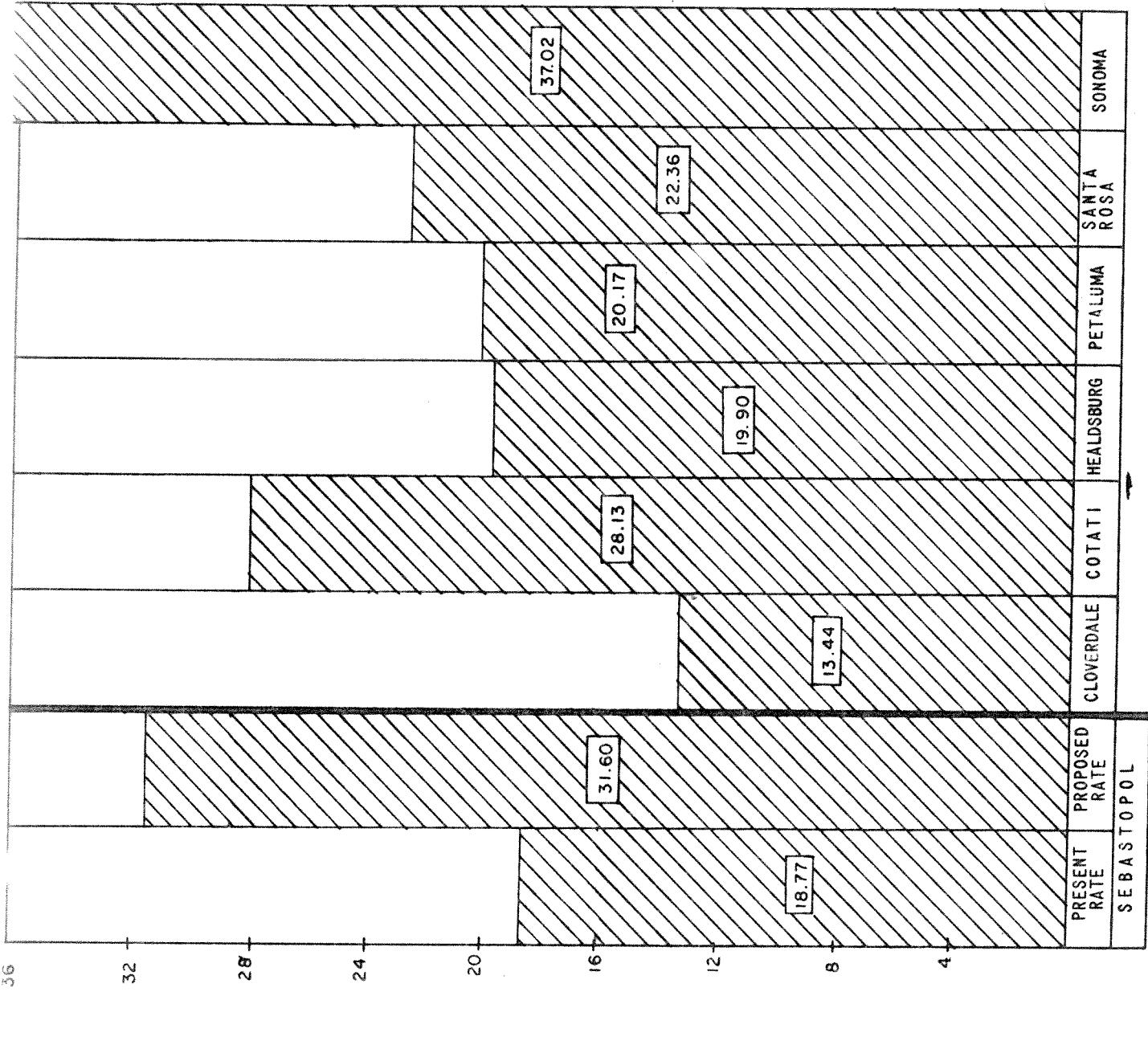
#### Recommendation

It is recommended that the City Council establish water rates which will produce sufficient revenue to offset costs. The water rates should be established at a minimum \$8.00 per 3/4" meter bi-monthly charge for which the user would be allowed 100 cubic feet of water. Each 100 cubic feet of water beyond the minimum should be charged at 60¢ per 100 cubic feet.

**COMPARATIVE WATER COST - RESIDENTIAL USE**

3/4" METER

Family of four - 124



JAN. 1980  
ENGR. P-83

